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ABSTRACT

The booklet presents a rationale for a prescriptive teaching approach and discusses materials appropriate to both the diagnostic and instructional phases of prescriptive teaching. Prescriptive education is defined as an approach to curriculum based upon thorough diagnostic evaluation of a child's specific learning abilities and disabilities. Described are instruments for assessing students' perceptual motor abilities, spelling difficulties, arithmetic difficulties, behavior, speech and language problems, and reading problems. It is recommended that teachers use descriptive data to analyze learning tasks (using either a behavioral approach or analysis of task presentation and response), develop teacher strategies, and establish terminal criteria. To illustrate how teachers may employ varied materials to meet educational objectives, contemporary teaching approaches are reviewed for the following subject areas: reading (basal readers, language experience, the kinesthetic approach, and the phonics approach), arithmetic (programed materials, Montessori materials, and games), spelling (use of typewriters, an alphabetic-phonetic approach, and a developmental program for remedial work), language development (psycholinguistic approach, and expressive approach), perceptual motor development, and behavior change. The importance of evaluation procedures in prescriptive teaching is stressed. (GW)

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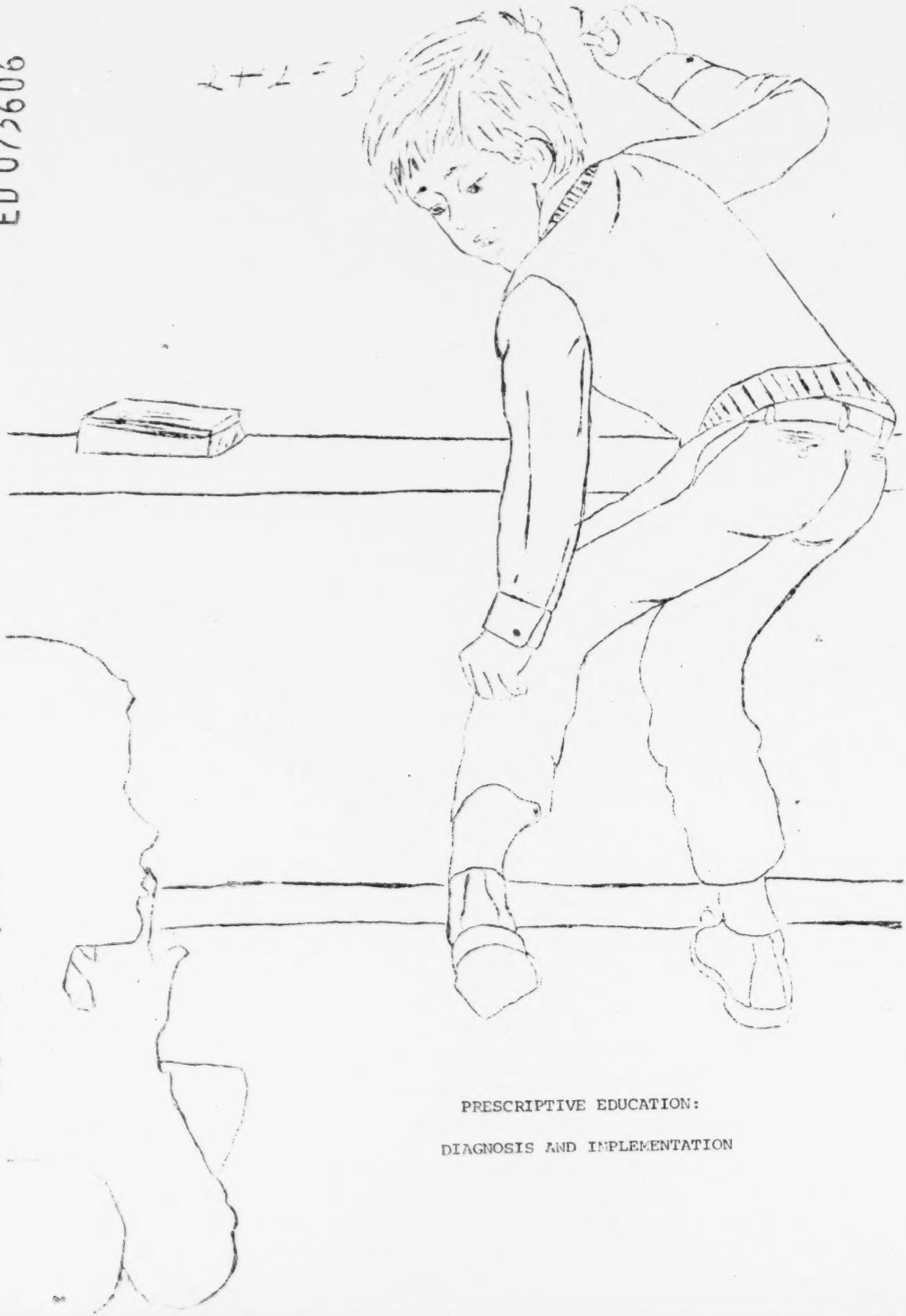

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PRESCRIPTIVE EDUCATION:

DIAGNOSIS AND IMPLEMENTATION

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PRESCRIPTIVE EDUCATION: DIAGNOSIS AND IMPLEMENTATION

by

Lucy Heine and Betty Rahaim

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I. Prescriptive Teaching:

What and Why -

All children are complex; all children need individual teaching; all children need guidance in learning how to live happily and productively; all children need to have their individual needs met, their individual problems studied and solved. They need individual understanding of their own needs and needs of others so that they may more easily grow into mature, mentally healthy adults. Prescriptive teaching then implies a concept about teaching. It does require flexibility and continuous probing by the teacher but it does not require any one particular organizational pattern, setting, form or style of teaching. The goal of prescriptive teaching is to tailor learning experiences to the unique needs of each child. Using all the information gained in the diagnosis, a specific teaching program is designed. But diagnosis does not stop when treatment begins. In fact, continuous treatment and diagnosis becomes the essence of prescriptive teaching. This means the teacher modifies his teaching procedures and plans as new needs become apparent. Prescriptive teaching can be viewed as an alternating teach-test process with the teacher alternating his role between teacher and tester. Prescriptive teaching, diagnostic and individualized instruction, is not new or innovative, but rather is the renewed and continuing aspiration toward a fundamental goal of special education, but prescriptive teaching is not only for special education but should be used for all children, no matter what their classification.

The effectiveness of prescriptive education is directly related to diagnostic accuracy, thoroughness and significance. In the past, diagnostic workups often emphasized findings which had little educational relevance. As a result, educators tended to view clinical diagnosis with limited enthusiasm. Teachers complained that psycological reports did not tell them what to do with the child in the classroom.

The diagnostic information being sought today by the prescriptive teacher may come from the neurologist, pediatrician, ophthamologist, psychiatrist, psychologist or other specialist. Increasingly, however, these specialists will be asked to indicate the relevance of their findings along with the implications which these findings have for the child. The educator must become more sophisticated in his grasp of the terminology of these disciplines which support his work.

The effectiveness of prescriptive education is also directly related to the teacher's selection of procedures which "fit" the diagnostic information available for each individual. No single remedial approach to learning can be best for all children.

The effectiveness of prescriptive education ultimately depends upon the empirical validity of the procedures adopted. Too often diagnosis and recommendations are divorced from treatment. The diagnostician seldom learns whether his suggested treatment produced the anticipated changes. Changes in performance are assumed to be related to the educational procedures used with little recognition given to the influence of maturation, parental attitudes, measurement errors and social-emotional factors.

The prescription is not in itself an end. It is only the means by which an attempt is made to assess the areas of strengths and weaknesses in development and learning. For too long a period in education childrens' problems have been diagnosed but not prescribed for. The provision of appropriate educational prescriptions for children who are experiencing trouble in school must be based on certain relevant information gathered. This data must be systematically gathered by the teacher and/or other professionals. The teacher should assume the responsibility for a synthesis of the information, and see that proper interpretations are made which will lead to the identification and provision of pertinent instruction. Both formal and informal testing procedures should be conducted; diagnosis must be viewed as a continual and necessary aspect of proper instruction. The teacher should seek the advice of specialists throughout the process. Those educators who do not subscribe to the belief that teachers must develop skill in educational diagnosis and provide remediation accordingly are implicitly suggesting that either individual variation does not exist in classes, or that, if variability is present, it is irrelevant to the instructional program.

II. Prescriptive Teaching:

Gathering Information Diagnosis: Formal and Informal Testing

In order to respond quickly and effectively on the many occasions when a decision must be made about students, the teacher must have specific information about the youngsters. This knowledge provides documentation which allows the teacher to accept or reject various instructional approaches. The teacher faces two important issues in securing this documentation. First, she must know what to look for on which dimensions. Second, the teacher must collect the data systematically by objective and carefully executed observations of characteristic student behavior. Consequently, each teacher must develop a repertoire of informal evaluative techniques in a number of relevant areas. By developing skill in the informal assessment of student behavior the teacher will be able to:

1. Ascertain areas of strength and weakness in pupils and in many instances, identify the basis for eduational difficulties.
2. Gain an understanding of the most efficacious techniques for presenting subject matter to youngsters who exhibit various learning problems.
3. Construct curricula in a logical sequence; and
4. Appreciate the degree to which materials should be presented, using one or a combination of pertinent instructional media.

The employment of appropriate diagnostic data allows the teacher to make informed decisions concerning the most suitable educational practices for each youngster. Without these data, valuable time will be lost and instructional efficiency will suffer.

Understanding formal evaluative procedures will be helpful to the teacher in conducting effectively her own informal assessment tactics.

As teachers become skillful in diagnosing the patterns of strengths and weaknesses in children, there is some danger in their beginning to view themselves as competent school psychologists or clinicians. It is important that they understand the limits of their ability to diagnose educational difficulties. There are many hazards involved in administering formal clinical instruments and interpreting results without the necessary training and clinical experience. Teachers should always assume a conservative posture in this regard; when comprehensive, in-depth testing and assessment seem warranted, the child should be referred to a qualified professional. Specialists in the measurement and evaluation of human behavior are asked to estimate children's behavioral capabilities and achievement in a variety of dimensions and for a number of purposes. It is alarmingly clear that the accuracy of these estimates is critical since these data are used to make significant decisions.

Ferguson (1963) has noted that the primary purpose of cumulative school records is to serve as a resource for school personnel so that they can devise an effective educational program for each pupil. Cumulative school records of children who exhibit problems are frequently chronicles of school difficulties. Special education teachers usually face these children after they have been in a general school program and cumulative folders should be sources of important information, but only a portion of school records are sufficiently current to be of immediate value. After extracting what relevant information does exist, additional knowledge of educational functioning will be needed.

Formal testing is represented by standardized measures and examinations by such qualified persons as the: Psychologist and/or psychiatrists; the pediatrician and/or neurologist; the optometrists and/or opthalmologists. Because of the importance of his findings in prescribing a child's program, the role of the psychologist (hopefully a clinical-child psychologist) needs to be outlined in more detail. His report should cover general intelligence and ability, including functioning IQ with sub-test scores and indicated strengths and weaknesses; and evaluation or appraisal of achievement in the basic learning ability areas of gross motor development, sensory-motor integration, perceptual-motor skills, language development, conceptual skills and social skills, comments regarding the observed discrepancy between ability and achievement (if any) recommendations, specific learning needs to be considered, and other comments such as special treatment and follow-up. In diagnosing educational difficulties, the teacher should gather data from as many sources as possible. The observations of others within and outside the school program are valuable in formulating the most effective prescriptive program.

Some of the areas in which educational ability must be ascertained and some formed tests that can be used in this evaluation are as follows:

Diagnosis Used for Perceptual-Motor Abilities

Physicians are often asked to judge the motor abilities of children who experience chronic difficulties in and out of school. Their examination usually includes a general physical assessment, a record of the child's developmental history and a neurological examination, which can be either cursory or comprehensive according to the clinical signs.

One of the most comprehensive instruments for ascertaining perceptual-motor weaknesses is the Purdue Perceptual-Motor Survey which was developed and standardized by Roach and Kephart (1966). It was designed for ages 6-9 but it can be used with younger or older children. The tasks are easy to administer, can be used in a group setting, and survey a rather complete spectrum of perceptual-motor dimensions. Other formal instruments that can be selected for assessment of perceptual-motor ability are: (1) Rail-Walking Test; (2) Lincoln-Oseretsky Tests of Motor Proficiency; (3) Marianne Frostig Development Test of Visual Perception; (4) Maze Tests; (5) Visual Forms Tests; (6) tests that require tracing, coding or coloring. In considering possible approaches to the informal assessment of visual receptive abilities, many of the activities suggested by Montessori are directly relevant.

Spelling Difficulties Diagnosis

Standardized methods of studying spelling disabilities are utilized in certain diagnostic tests. The Gates-Russell Spelling Diagnostic Tests are the best known. They include a series of nine tests. Performance on each of the nine tests is evaluated in terms of grade scores and by recording brief descriptions of pupil reactions and responses. The synthesis of the comprehensive information compiled by this many-sided testing program leads to the diagnosis of the nature of the spelling problem and to the identification of the causes most likely to be at the root of the difficulty. A remedial program can then be planned and undertaken.

Arithmetic Difficulties - Diagnosis

There are a variety of achievement tests that include sections on arithmetic, such as the Metropolitan; the Stanford; and the SRA to mention a few, and while achievement tests will provide a general picture of areas in which a child may be having difficulty, their diagnostic value is limited. These survey tests are not designed to evaluate specific difficulties in depth - they do not include a formal means of assessing the strategy a child might use in solving a problem. This assessment is highly important in identifying the reasons for arithmetic weaknesses. The diagnostic arithmetic tests are not as involved in their administration as are diagnostic reading tests. Some of these diagnostic tests which require specialized ability for administration are:

1. Diagnostic Tests and Self-Help in Arithmetic (Brueckner) Grades 3-8; examines addition, subtraction, multiplication, division, operations with whole numbers, fractions, decimals, percentages and measurements.
2. Los Angeles Diagnostic Tests: Fundamentals and Reasoning. Grades 2-9.
3. Diagnostic Chart for Fundamental Processes in Arithmetic. All elementary grades; examines arithmetic habits, procedures, and types of errors made.
4. Key Math Diagnostic Test. An individually administered test designed to provide assessment of mathematical skills. Test items are divided into 4 subtests organized into three major areas - Content, Operations, and Applications. By identifying the individual's strengths and weaknesses, a foundation is laid for tailoring an appropriate instructional program. Although this test will be used primarily in pre-school through grade six there is no upper limit for individual clinical and remedial use.

In constructing informal arithmetic tests, teachers will find an adequate sample of tasks in workbooks or texts. Various forms of tests can be developed, typed on large cards and used over and over again. The student's responses should be kept for comparison with performance on formal tests. This comparison will provide a consistent picture of each child's unique arithmetic strengths and weaknesses. A constant check will help to prevent the reinforcement of incorrect procedures. Early detection means easier remediation. Diagnosis, both formal and informal, then should be a constant activity.

Personal-Emotional-Social Observations of Behavior

Most of the impressions a teacher uses in assessing a child's psychological health come from direct observation of his behavior during the school day. When observations in important learning, social, and interpersonal situations are carefully made and accurately recorded, they can be valuable in constructing a picture of the child's level and mode of functioning. The validity of the ratings and interpretations derived from these formal instruments depends upon the competence of the person using them. In most instances, they should not be used independently by a teacher until or unless he has given and interpreted them under the supervision of a psychologist qualified in their use. Whereas formal observation of child behavior requires precise designation of time and setting; informal observation can occur at any time and place during the school day. It is important to note the conditions under which behavioral incidents occur. It is then possible to interpret much of the variation in the

child's behavior in the light of widely differing conditions under which he operates during the school day, such as, discussion periods, role playing and dramatic presentations, creative art experiences, and playground activities.

Speech and Language Problems - Diagnosis

Regardless of the origin of poor language development, remedial steps are necessary, and before remedial steps can be taken, some information about the level of language functioning is needed. There are many ways to appraise language, but the most frequently discussed formal test is probably the Illinois Test of Psycholinguistic Abilities (McCarthy and Kirk, 1961). This test attempts to evaluate receptive, associative, and expressive abilities. It is a rather complicated test to give, so it should be administered by a skillful psychological examiner rather than a classroom teacher. This test is made up of 12 subtests to delineate specific language abilities and disabilities in children. Another frequently used test is the Peabody Picture Vocabulary Test which is designed to measure comprehension for the spoken word and the ability to associate verbal symbols with pictorial representations of objects, events, and actions. It provides a general measure of receptive language and is sometimes used as a predictor of school success. Extensive specialized preparation is not needed to administer the test. Total time for administration and scoring is approximately 20 minutes.

Still another well known test is the Slingerland Screening Tests. These tests are designed to screen those children who show indications of specific language difficulties in reading, writing, spelling, and speaking. They may be administered on a group or individual basis. Three sets of tests appropriate for different grade levels are available. The test is untimed and may be administered in two parts.

The Goldman-Fristoe-Woodcock Test of Auditory Discrimination is an instrument for measuring speech sound discrimination on an individual basis. Although designed for the normal-hearing child, this test could be adapted for most handicaps according to the examiner's discretion. It is easy to administer and requires a minimum of special equipment.

Diagnosis of Reading Problems

IRI - The Informal Reading Inventory is really a composite of many techniques which deal with reading capacity, achievement, and error analysis. It has been defined as a "teacher-made diagnostic reading test" based on a series of graded books, usually a series of basal readers. It can be used to select appropriate reading material for use with an individual child or a homogeneous group. The teacher records the errors of the child at each level. Following each reading selection, questions are asked to test comprehension. The IRI can furnish valuable data not always available from standardized instruments.

There is a consensus among reading authorities that adequate vocabulary development is crucial for good reading comprehension. For this reason, most standardized tests include a separate vocabulary sub-test; for example the oral vocabulary of the Gates-McKillop Reading Diagnostic Tests.

A useful teachnique for determining whether a child in the early grades can recognize and pronounce words correctly and whether he can associate a meaningful concept with them is that which may be described as a "book analysis". The teacher analyzes a basal reader by breaking down its vocabulary into separate tests of nouns, verbs, and prepositions, and obtains pictures corresponding in meaning to the nouns, and wherever possible to the verbs and prepositions. The child is called upon to read each word aloud and then select the matching picture. If the child is unable to read the word orally, the teacher tells him and asks him to select the picture which corresponds with the word. This technique is excellent for ascertaining sight words, and the child's understanding of verbal concepts.

A variety of standardized tests are commercially available for evaluation of both oral and silent reading achievement. Regrettably, many formal tests suffer from at least three limitations for which compensation must be made by reliance on other techniques. These tests (1) do not correct for guessing (2) do not easily measure the small increments of progress for which the teacher is constantly looking; and (3) they can be used only for tentative grouping of children for instruction.

All tests are samples of current performance; they describe present proficiency on the variables included in the test. Educators must abandon the unfounded notion that children are born with immutable potentials to achieve. Such predeterministic conceptions of fixed capacity must give way to positions that stress the functional relationships between competency and environmental changes. After all, that is what education is, or should be, all about; arranging instructional circumstances in order to bring about direct changes in pupil achievement.

III. Using the Diagnostic Information

After the descriptive information has been gathered, the next step is to utilize this data in planning the prescriptive program. In using diagnostic information for prescribing the desired educational program, the teacher should especially look at the "peaks" and "valleys" on test profiles. The resulting instruction should be related to broad educational objectives and, through careful planning, the work on specific deficits can be coordinated into this curriculum.

Diagnostic information about students, even when it is relevant, is valuable only if it is used. Once these comprehensive descriptions have been accumulated, the prescriptive teacher has a basis for specifying tasks to be learned by the students. Teachers are better able to sequence instruction when the collected information is used for:

1. analyzing learning tasks
2. developing teacher strategies
3. establishing terminal criteria

A. With regard to analyzing specific learning tasks, there are two recognized approaches in prescriptive teaching.

a. The Behavioral Approach

This approach places relatively little emphasis on discovering abilities or disabilities within a child, while it places major emphasis on the specific educational tasks to be taught. The important questions behind curriculum planning with this approach include:

1. What specific educational tasks are important for the child to learn?
2. What are the sequential steps in learning the task?
3. What specific behaviors does the child need to perform this task?

In other words, the educational objective is operationally determined and the specific desired behaviors of the child are diagnosed for each step.

b. Analysis of Task Presentation and Response

This approach analyzes two aspects of the task the child is expected to accomplish: the manner of presentation, and the mode of response. These two aspects are then considered in relation to the child's success or failure in performing the task. The task can be analyzed in a number of ways:

1. What perceptual channels are required in order to receive the presentation and perform the task?
2. Is a single sensory perception needed or is a cross-modal shifting from one sensory system to another required?

3. Is the task primarily verbal or non-verbal in nature?
4. Does the task require social or non-social judgements?
5. What skills and levels of involvement (perception, memory, symbolization, conceptualization) are involved?

If a child fails a task, then the teacher analyzes whether failure is due to the manner of presentation or the mode of response, and the teacher probes for the factor that accounts for the failure.

The use of both of these approaches to task analysis in examining teaching materials and test materials, often reveals that the name of the exercise has little to do with the skills required to understand and perform the task. Prescriptive teaching requires the ability to understand the task and its elements, and to compare these to the abilities of the child.

B. When the learning tasks have been defined, teaching strategies must be determined. In developing these strategies, a prescriptive program plan devises exactly what the students will be taught, and how they will be taught, in order to achieve the predetermined learning tasks. This involves:

1. selecting instructional materials which contain that content needed to meet the learning tasks
2. choosing the teaching approach which utilizes the students' strongest sensory modalities

C. After the learning tasks and the teacher strategies are determined, the prescriptive teacher must then establish the terminal criteria. This criteria becomes the basis for deciding:

1. if instructional gains are being made
2. when to set new tasks
3. when to change teaching approaches

Criteria for evaluation of instruction should be established when the learning task is set. Mager has noted that, "If we can specify at least the minimum acceptable performance for each objective, we will have a performance standard against which to test our instructional program--determining whether our programs are successful in achieving our instructional intent (p.44).

IV. Treatment: The Instructional Program

Making these objectives more concrete and converting them into action is more difficult than merely stating the above mentioned goals. In designing the treatment or instructional program, the prescriptive teacher must continually search for varied materials which enable the educational objectives to be met. The teacher must understand the child's strengths and weaknesses as indicated on the diagnostic evaluation and design the educational treatment with them in mind. Prescriptive teaching must never rely on the merits of a single type of material or a single instructional approach, and should adapt many of the known methods and create new ideas as they evolve from the children's interest and enthusiasms in planning the instructional program.

A review of contemporary teaching approaches in different subject areas, will clarify the argument that no single instructional program is adequate for prescriptive teaching.

A. Treatment: Reading Instruction

Ten identifiable reading approaches and examples of corresponding materials on the market contrast the differences in instructional rationale for this subject.

1. Basal Readers: They are excellent for teaching many reading skills and are the backbone of American reading instruction. However, the prescriptive teacher will be concerned about the conceptual as well as the perceptual characteristics of the series. For example, the basic vocabulary load will require varying degrees of visual memory abilities as phonics skills will require auditory integration ability. The teacher should also be be aware of the differences between basal series, and should select programs with students' needs in mind. Example: Scott-Foresman, Open Highways series.

2. Language Experience: This approach has distinct advant ges for the child with reading difficulties because of its high degree of relevance and interest. It might be inappropriate for children having problems in analyzing or seeing components, due to emphasis on sight vocabulary. It would be more effective with conceptually disabled children than perceptually disabled ones. Therefore, the prescriptive teacher would not endorse this treatment with all reading disability cases.

3. Kinesthetic Approach: This method of tracing, copying and writing words from memory, adds a significant dimension to the teaching of reading. The VATK (visual auditory, tactile, kinesthetic) which is attributed to Grace Fernald, is an important supplement for all children with a pronounced difficulty in reading. Example: Open Court

4. Phonics Approach: Relatively rigid in structure, a true phonics approach presents the English sounds systematically. Since it is presented in a primarily auditory fashion, and also requires isolating and synthesizing sounds, it might be inappropriate for the student with problems in the auditory channels or who has difficulty with Gestalt concepts. Example: Sullivan Programmed Readers.

5. Linguistic Approach: According to linguistic study, reading is merely substituting visual signs for the auditory signals associated with language skills. Therefore, this approach suggests that children who have already aquired language, must simply practice using visual signs where they have automatically been using auditory signs. This highly structured, highly sequential program emphasizes sound patterns and is a basically auditory method. Example: Merrill Linguistic Readers

6. Initial Teaching Alphabet: This approach is gaining wide approval as an aid to early reading instruction because it introduces only one symbol for each sound in the English language. The elimination of exceptions, "spelling demons", elaborate rules and confusing alternate letter forms, makes the ITA an unusually helpful addition to the prescriptive reading program. However, the child with audiory closure problems, auditory integration or auditory motor deficiencies, will find it just as troublesome as traditional orthography despite its sound-symbol honesty. Example: Sir James Pittman, ITA.

7. Words in Color: Presenting words in color has potential for completely changing the nature of the initial discrimination required for word recognition and for fluent reading because combinations are relatively unimportant. There are real problems of word recognition and comprehension that are not resolved by this approach, and sometimes a student has a color recognition threshold beyond which new colors may confuse him. The prescriptive teacher must also realize that using color does not eliminate the problem of sequential skills introduction or visual and auditory integration. Example: "Words in Color". Dr. C. Gattegno, Zerox.

8. Rebus - Picture Symbols: Non-readers respond remarkably well to this system because pictures rather than sounds are assigned to each word. An important value of this rebus method is that written communication is possible upon first exposure to the symbols, and no elaborate readiness seems necessary. Present research indicates that the advantages of experiencing success with rebus may out weigh the disadvantages of an approach which introduces a new symbol system. Example: Rebus Reading Program, A. G. S.

9. Responsive Environment: Computerized typewriters are used in this reading approach which incorporates operant conditioning or behavior shaping techniques. The learner in this system, "plays" with the talking electric typewriter, and when the keys are struck which make syllables or words, the computer may be programed to say the word. The prescriptive educator may incorporate mechanical devices and reward strategies in many reading disability cases, but knowing what to reinforce, and how to reinforce are crucial. Example: "Edison Responsive Environment," E.R.E. Corporation.

10. Nuerological Approach: This highly controversial method emphasizes a program of sleep patterns, handedness, eye dominance and control, and crawling and walking patterns as they relate to the whole body system of the child. Doman and Delacato, the the founders of this approach, believe that when neurological organization is complete, through all levels to total unilaterality, problems of retarded readers banish; and futhermore, reading methods are secondary. The Catholic Archdiocese of Chicago has shown outstanding results with utilization of this approach for the corrective reading program. Example: Carl Delacato, The Treatment and Prevention of Reading Problems.

B. Several types of arithmetic methods and materials may be incorporated into the prescriptive teaching approach.

Treatment: Arithmetic Instruction

1. Concreteness is necessary and color, tactile, visual and auditory techniques are helpful in teaching arithmetic. Motor involvement, kinesthetic reinforcement, and use of varied sensory modalities are utilized in this approach. Example: Stern's Structural Arithmetic; Cuisennaire Rods.

2. Self - Discovery along with expressive and receptive language is perhaps the most fundamental educational therapy in learning basic arithmetic. Encouraging the child to "talk" in arithmetic terms and reinforcemnt of appropriate discovery behavior through auditory cues are emphasized in this method. Example: Montessori Method and Materials.

3. Programmed materials are designed to follow a sequential developmental program of arithmetic. This approach is useful in terms of general review, but does not allow for teaching specific learning tasks as required by a prescriptive educational program. Example: Fitzhugh - Plus Program

4. Basic skills workbooks are useful in teaching the foundations of arithmetic skills. These provide a broad approach to the subject area, and insure confrontation with tasks and skills relative to grade level achievement. Example: Harr Wagner Arithmetic Series.

5. Games can be an added incentive to learning math skills through the avenue of fun. The prescriptive teacher must be selective by choosing from the many arithmetic games on the market, those which can effectively supplement the program. Example: Judy; Ideal; and Milton Bradley Cos.

6. Mimeographed materials in packaged programs are available for arithmetic. The dittos are often cluttered, but the prescriptive teacher may effectively use parts of pages to supplement most basic skills instruction. Example: Continental Press

7. Books geared to early mathematics are introduced each year. Many are found in school libraries and provide an excellent way of learning primary skills through reading and listening activities. Example: Little Owl Series: Poems for Counting; Five is Five; Three Little Dachunds; What is Big?; One, Two, Three, Four.

8. Songs may be used as a directive with many activities, and may easily be incorporated into the prescriptive arithmetic program. If this represents a channel for learning, singing can be a delightfully effective way to aquire new learnings. Example: Bowmar Records

C. Treatment: Spelling Instruction

There are two common methods of teaching spelling:

1. The generic or deductive approach which is based on the premise that a student who understands basic rules of spelling (linguistic principles) will be able to generalize them into new words.

2. The specific or deductive approach which proceeds from the analysis of specific errors, to the identification of patterns of strengths and weaknesses in spelling.

Traditional spelling books or basal spellers encompass the first technique. However, the teacher should emphasize the specific approach in designing a prescriptive spelling program. The generic method, therefore is only effective when used in combination with the specific approach.

Three programs which follow the principles of the specific or inductive approach to teaching are especially helpful to the prescriptive spelling program.

1. The (Cronin) Letter Box is based on an alphabetic - phonetic approach to the teaching of spelling. Emphasis on proper sequence and clear auditory - visual perception is inherent in this program. Use of letter cards which the student manipulates, provides a kinesthetic reinforcement of letter image. Example: Cronin Letter Box, Academic Therapy.

2. The Typing Keys approach utilizes the typewriter as a remedial tool for teaching spelling and reading skills. two hypotheses underline this method:

   1. A child with a writing problem can learn to type reasonably well.
   2. A child may develop a better awareness of the sequence of letters in words through visual - motor and perceptual - motor reinforcement. Example: Maetta Davis, Typing Keys for the Remediation of Spelling and Reading, Academic Therapy.

3. The Gates - Russell Diagnostic and Remedial Spelling Manual contains a developmental program for remedial work in spelling. Correction of specific spelling disabilities as indicated on the accompanying test are outlined in this program. One disadvantage of this very helpful program is its strict emphasis on sequence which requires all students to begin at the beginning.

D. Treatment: Language Development

Prescriptive teaching recognizes that the language development program must include the receptive, inner, and expressive components to enable the child to link language with thinking. Two approaches which effectively accomplish the goal by use of different methods are recommended for use by the prescriptive teacher.

1. Psycholinguistic approach: Linguistic difficulties as identified by the ITPA require specifically designed activities which improve the communication process. Two books of particular interest provide excellent guides for the language section of the educational prescription. Both incorporate remediation techniques for the improvement of psycholinguistic skills according to both problem groups and interest areas in language.

   a. Wilma Jo Bush and Marion T. Giles, Aids to Psycholinguistic Teaching, Merrill Publishing Co., Columbus, Ohio, 1969.

   b. Merle Kaines, Helping Young Children Develop Language Skills; A Book of Activities; CEC, Wahington, D.C.., 1968.

2. Expressive Approach. Fluent verbal expression and communication develop as a result of experience and verbal stimulation. This method, therefore, provides the setting in which the child may express himself and is rewarded and encouraged to engage in extended forms of verbal communication. Several language development programs having this rationale would be suitable for the language prescription.

   a. Peabody Language Development Kit

   b. Distac Language Program

   c. "An Experience - Centered Language Program". Franklin Publications

E. Treatment: Perceptual Motor Development

Since aquistion of sensory motor skills is prerequisite to all learning, the child with deficits in these areas requires a prescribed perceptual - motor development program. This program should include two distinct but interrelated facets.

1. Gross Perceptual - Motor Development: Remediation in perceptual-motor areas as identified on the "Perdue Perceptual Motor Survey" are outlined in the Slow Learner Series, edited by Newell Kepart. Of particular interest to the prescriptive teacher in developing a perceptual - motor program are:

   a. The Slow Learner in the Classroom;
   b. Motoric Aids to Perceptual Training
   c. Steps to Achievement for the Slow Learner (Merrill Publishing Co.)

Two other programs which follow a similar format and offer excellent remediation techniques for perceptual - motor training are the Perceptual - Motor Skills section of:

   d. The Remediation of Learning Disabilities (Fearor Publishers).
   e. Aids to Psycholinguistic Teaching, (Merrill Publishers).

2. Fine Perceptual - Motor Development: The child with either auditory or visual perception problems can be greatly aided by following comprehensively designed programs for remediating these perceptual - motor disabilities.

   a. Reading and Remedial Reading (Humanities Press) by A. E. Tansley, provides activities for learning to listen and attend as well as eye-hand coordination.
   b. The Frostig Program for the Development of Visual Perception consists of a complete set of materials designed to develop and improve a child's visual perception and is based on the five areas of the Frostig Test.

Other programs which correspond to specific disabilities diagnoses for these perceptual - motor areas include:

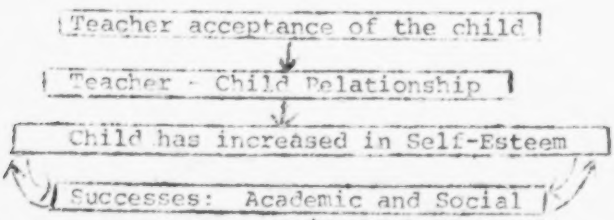
   c. The Developmental Program in Visual Perception (Follett Publishing Co.)
   d. ERIE Program - Perceptual - Motor: Teaching Materials (Teaching Resources)
   e. Fairbanks - Robinson Program in Perceptual - Motor Development (Teaching Resources)
   f. Visual - Perceptual Skills, Filmstrips, (Educational Record Sales)
   g. Visual - Motor Skills, (Contenental Press)
   h. Sights and Sounds, Records, (Bomar Records)

F. Treatment: Behavioral Change

The primary task of the prescriptive teacher is to develop in the child a sense of competency. The child must have:

1. A sense of trust about himself and others.
2. A sense of well-being in the learning situation.
3. A sense of communicating effectively with others.
4. A sense of certainty that given behavior will produce a given response. Not until the child acquires this sense of competency will he be receptive to any treatment or instructional program.

The model for behavior change which may be used in a prescriptive program is:


Teacher acceptance of the child
Teacher - Child Relationship
Child has increased in Self-Esteem
Successes: Academic and Social

(Wachenheim p. 90)

This setting, reinforced by positive behavior-modification techniques provides a conducive learning environment for the prescriptive program.

V. Evaluating Instruction

In implementing a prescriptive teaching program, the final and most important step is evaluation. Evaluation should be a continous process which provides the teacher with information concerning the effects of instruction. This information is then used for determining which segments of the materials and skills need to be retaught, and if students have aquired prerequisite skills for more difficult learning tasks. Three features of evaluating instruction should be included in a prescriptive program.

A. The Use of Repeated Measurement

This indicates both the effectiveness of a particular program and the specific learnings which have occured.

B. Measuring Gains Under Different Evaluative Conditions

This indicates whether or not there has been a transfer of learning in the student.

C. Using Measurements Over Time

This long-term evaluation indicates whether what was learned at an earlier time was actually maintained effectively.

Summary and Conclusion

In summary, prescriptive education is an approach to curriculum based upon thorough diagnostic evaluation of a child's specific learning abilities and disabilities. The question of what a child can do is just as important as what he cannot do. Also prescriptive teaching is based upon a thorough understanding of the differences in proceedures and materials used to teach basic skills and alter behaviors.

The effectiveness of the prescriptive teaching approach rests upon: 1) thorough diagnosis, 2) sound selection of teaching proceedures, and 3) diagnostic measurement of success.

Frierson (1967) states that the prescriptive educator "---must continually view education as applied science rather than a wholly intuitive art. Yet (prescriptive) education will be strongest if the children being served are considered first to be children having distinctly human needs, and not merely broken-down learning machines whose needs can be met by following a service manual." (p.488)

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